

line 25, delete "contaminations" and  
substitute therefor -- ~~contamination~~ --;

line 26, delete "protein" and substitute  
therefor -- proteins --; ~~and~~

line 35, delete "vector" and substitute  
therefor -- sequence --.

Page 35, line 20, delete "chain" and substitute  
therefor -- chains --; and

line 26, delete "polypeptides" and  
substitute therefor -- ~~polypeptide~~ --.

IN THE CLAIMS

Kindly amend the claims as follows:

16. (Twice amended) An HLA-DR typing process  
comprising the steps of restricting DNA isolated from an  
[the] individual to be typed with at least one restriction  
endonuclease; size fractionating the restricted DNA;  
hybridizing the size-fractionated DNA to a DNA sequence of  
any one of claims 23-24 and 34-39 and detecting [the areas  
of] hybridization between said DNA and said DNA sequence.

17. (Amended) The process of claim 16, wherein a  
<sup>32</sup>P-labelled DNA sequence is employed for hybridization and  
its radioactive label is used for detecting [the areas of]  
hybridization between said DNA and said DNA sequence.

23. (Amended) An isolated [A] DNA sequence encoding a portion of at least one  $\beta$ -chain antigen of the HLA-DR locus of the human lymphocyte antigen complex, said DNA sequence being selected from the group consisting of:

(a) the DNA sequences of [inserts] DR- $\beta$ -A, DR- $\beta$ -B and DR- $\beta$ -C,

(b) the expressed portion of the DNA sequences of [inserts] DR- $\beta$ -A, DR- $\beta$ -B and DR- $\beta$ -C,

(c) DNA sequences that hybridize under high criterium to any of the foregoing sequences,

(d) DNA sequences that, upon expression, code for a portion of a polypeptide encoded by any one of the foregoing DNA sequences [inserts], said portion comprising a region of mismatch between [the polypeptides coded for by] any two of the foregoing DNA sequences [inserts], and which hybridize under high criterium thereto, and

(e) DNA sequences which, as a result of the genetic code are degenerate to [coding on expression for the polypeptides coded for by the expression of] any of the foregoing DNA sequences [or DNA inserts].

24. (Amended) The DNA sequence of claim 23, wherein said DNA sequence (b) which hybridizes to said DNA sequence (a) is selected from the group consisting of:

(f) the DNA sequence [insert] of DR- $\beta$ -D,

(g) DNA sequences which hybridize under high criterium to the DNA sequence [insert] of DR- $\beta$ -D,

(h) DNA sequences that, upon expression, code for a portion of a polypeptide encoded by the DNA sequence of [insert] DR- $\beta$ -D, said portion comprising a region of mismatch between [the polypeptides coded for by] said DNA sequence [insert] and any one of the DNA sequences of [inserts] DR- $\beta$ -A, DR- $\beta$ -B and DR- $\beta$ -C, and

(i) DNA sequences which, as a result of the genetic code are degenerate to [coding on expression for the polypeptides coded for by the expression of] any of the foregoing DNA sequences [or inserts].

30. (Amended) The HLA-DR typing process of claim 16 further comprising the step of hybridizing the size-fractionated DNA to a hybridization control, [wherein the said hybridization control being [is] a 19-mer of the formula GCTTCGACAGCGACGTGGG.

31. (Amended) An isolated [A] DNA sequence [specific] which specifically hybridizes to an HLA DR- $\beta$ -chain locus, said DNA sequence being [specific] capable of specifically hybridizing to a polymorphic region of said locus to allow determination of one or more HLA alleles for use in HLA DR- $\beta$  typing, said polymorphic region being

encoded by DNA selected from the group consisting of:

- (a) DNA sequences encoding amino acids 8-14 of said locus;
- (b) DNA sequences encoding amino acids 26-32 of said locus;
- (c) DNA sequences encoding amino acids 72-78 of said locus;
- (d) portions of any one of the foregoing DNA sequences which are [specific] capable of specifically hybridizing to said polymorphic region;
- (e) DNA sequences which are fully complementary to any of the foregoing DNA sequences; and
- (f) DNA sequences which, as a result of the genetic code, are degenerate to any of the foregoing DNA sequences.

32. (Amended) An isolated [A] DNA sequence [specific] which specifically hybridizes to an HLA Class II  $\beta$ -chain locus, said DNA sequence being [specific] capable of specifically hybridizing to a polymorphic region of said locus to allow determination of one or more HLA alleles for use in HLA  $\beta$  typing, said polymorphic region being encoded by DNA selected from the group consisting of:

- (a) DNA sequences encoding amino acids 8-14 of said locus;

(b) DNA sequences encoding amino acids 26-32 of said locus;

(c) DNA sequences encoding amino acids 72-78 of said locus;

(d) portions of any one of the foregoing DNA sequences which are [specific] capable of specifically hybridizing to said polymorphic region;

(e) DNA sequences which are fully complementary to any of the foregoing DNA sequences; and

(f) DNA sequences which, as a result of the genetic code, are degenerate to any of the foregoing DNA sequences.

33. (Amended) A DNA sequence [specific] which specifically hybridizes to an HLA DR- $\beta$ -chain locus, said DNA sequence being [specific] capable of specifically hybridizing to a conserved region of said locus to allow determination of one or more HLA alleles for use in HLA typing, said conserved region comprising a DNA sequence selected from the group consisting of:

(a) DNA sequences encoding amino acids 39-45 of said locus;

(b) portions of the foregoing DNA sequences which are [specific] capable of specifically hybridizing to said conserved region;

(c) DNA sequences which are fully complementary to any of the foregoing DNA sequences; and

(d) DNA sequences which, as a result of the genetic code, are degenerate to any of the foregoing DNA sequences.

38. (Amended) The isolated [A] DNA sequence [having the formula]:

GGGGACACCCGACCACGTTTCTTGGAGCTGCTTAAGTCTGAGTGTCAATTTCT  
TCAATGGGACGGAGCGGGTGC GGTTCTTGGAGAGACACTTCCATAACCAGGA  
GGAGTACGCGCGCTTCGACAGCGACGTGGGGGAGTACCGGGCGGTGAGGGAG  
CTGGGGCGGCCTGATGCGGAGTACTGGAACAGCCAGAAGGACCTCCTGGAGC  
AGAAGCGGGGCCAGGTGGACAATTACTGCAGACACAACCTACGGGGTTGTGGA  
GAGCTTCACAGTGCAGCGGGCGAGTCCATCCTCAGGTGACTGTGTATCCTGCA  
AAGACCCAGCCCCTGCAGCACCACAACCTCCTGGTCTGCTCTGTGAGTGGTT  
TCTATCCAGGCAGCATTTGAAGTCAGGTGGTTCCGGAACGGCCAGGAAGAGAA  
GGCTGGGGTGGTGTCCACGGGCCTGATCCAGAATGGAGACTGGACCTTCCAG  
ACCCTGGTGATGCTAGAAACATTTCTCGGAGTGGAGAGGTTTACACCTGCC  
AAGTGGAGCACCCAAAGCGTAACGAGCCCTCTCACAGTGGAAATGGAGTGCACG  
GTCTGAATCTGCACAGAGCAAGATGCTGAGTGGAGTCGGGGGCTTTGTGCTG  
GGCCTGCTCTTCCTTGGGGCCGGGCTGTTTCATCTACTTCAGGAATCAGAAAG  
GACACTCTGGACTTCAGCCAACAGGATTCCTGAGC.

39. (Amended) The isolated [A] DNA sequence [having the formula]:

GGGGACACCCGACCACGTTTCTTGGAGCAGGTTAAACATGAGTGTCAATTTCT

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cont

TCAACGGGACGGAGCGGGTGCGGTTCTGGACAGATACTTCTATCACCAAGA  
GGAGTACGTGCGCTTCGACAGCGACGTGGGGGAGTACCGGGCCGTGACGGAG  
CTGGGGCGGCCTGATGCCGAGTACTGGAACAGCCAGAAGGACCTCCTGGAGC  
AGAAGCGGGCCGCGGTGGACACCTACTGCAGACACAACCTACGGGGTTGGTGA  
GAGCTTCACAGTGCAGCGGCGAGTCTATCCTGAGGTGACTGTGTATCCTGCA  
AAGACCCAGCCCCTGCAGCACCACAACCTCCTGGTCTGCTCTGTGAATGGTT  
TCTATCCAGGCAGCAATTGAAGTCAGGTGGTTCCGGAACGGCCAGGAAGAGAA  
GACTGGGGTGGTGTCCACAGGCCTGATCCAGAATGGAGACTGGACCTTCCAG  
ACCCTGGTGATGCTGGAAACAGTTCCTCGGAGTGGAGAGGTTTACACCTCCC  
AAGTGGAGCACCCAAGCCTGACGAGCCCTCTCACAGTGAATGGAGAGCACG  
GTCTGAATCTGCACAGAGCAAGATGCTGAGTGGAGTCGGGGGCTTCGTGCTG  
GGCCTGCTCTTCCTTGGGGCCGGGCTGTTTCATCTACTTCAGGAATCAGAAAG  
GACACTCTGGACTTCAGCCAACAGGATTCCTGAGC.

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42. (Amended) An HLA-DR typing process  
comprising the steps of hybridizing DNA in a sample to be  
tested to a DNA sequence according to any one of claims 31-  
33 and detecting [the] hybridization between said DNA and  
said DNA sequence.

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44. (Amended) An HLA-DR typing process  
comprising the steps of hybridizing DNA in a sample to be  
tested to a DNA sequence according to any one of claims 23-  
24 and 34-39 and detecting [the] hybridization between said  
DNA and said DNA sequence.